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F/NWO3

MEMORANDUM FOR: OCRM - Patty Dornbusch

FROM: F/NWO3 - Elizabeth Gaar *Elizabeth Gaar*

SUBJECT: Comments on State of Oregon's 6217 Program Submission

Dear Patty:

Attached are NMFS/ETSD comments regarding the State of Oregon's submission under the Coastal Nonpoint Source Pollution Control (6217) Program. Sorry for the delay! Please share these internally only, for now. These comments have not been approved by Will Stelle, our Regional Director. We are still engaged in discussions with the Oregon Department of Forestry (ODF), and do not wish to go public with our findings until we have our documentation fully in hand. Also, we would like to be the first to apprise ODF of our concerns. You will note that we have divided our comments/concerns into three issues:

- o Adequacy of the State's Forest Practice Rules (FPRs); a sub-issue is consistency of the FPRs with the 6217 management measures
- o Adequacy of the State's proposed 6217 boundary to protect Pacific salmon
- o Compliance of the State's plan and the nationwide 6217 program with NMFS' Endangered Species Act requirements.

We regret that we did not have sufficient time to address urban and agricultural aspects of the State's submission; however as forestry is the dominant land use of Oregon's coastal zone we feel that we have emphasized the most important component of the State's plan.

Please let me know if you require further clarification of our comments. For technical questions regarding adequacy of Oregon FPRs, please contact Rowan Baker, of my staff. His number is (503) 231-2316.

Attachment

cc: F/PR - Margaret Lorenz
F/H - Jim Burgess
F/NWO - Will Stelle



Attachment**ISSUE #1 Adequacy of Oregon's Forest Practices Rules (FPRs) to Protect Salmon, and Consistency of the FPRs with the Management Measures of the 6217 Coastal Non-Point Source Pollution Control Program.****Background:**

Forestry is the land use of over 90 percent of Oregon's coastal zone, according to the State of Oregon's submittal under the 6217 Program. Furthermore, the submittal by the State of Oregon for the forestry land use category relies solely on the State of Oregon's Revised Forest Practice Rules (FPRs). It is therefore critical that OCRM carefully articulates and distinguishes between the ability of the Oregon FPRs to meet the needs of the 6217 program and the needs of salmon. Salmon are a beneficial use of the State's waters that occupy the majority of the coastal landscape in forest production, and are in relatively dire straits, as evidenced by current National Marine Fisheries Service (NMFS) proposals to list coho salmon, Klamath Mountains Province steelhead, and Umpqua River searun cutthroat trout under Section 7 of the Endangered Species Act (ESA). This is not to say that other land uses, including agriculture and urban, and other beneficial uses are not important; however, the dominance of the forested land base in coastal Oregon suggests that without significant benefits for water quality and salmon from forested lands, over presently degraded baseline conditions, the 6217 Program will not help achieve salmon conservation objectives.

Adequacy of the FPRs to Protect Salmon and Salmon Habitat:

The following concerns relate to whether the FPRs adequately protect and maintain essential features of critical habitat for proposed/listed anadromous salmonids. Essential features of critical habitat go beyond traditional "water quality" concerns and include physical and structural habitat attributes and the interactions of those attributes that contribute to the complexity of and productivity of those habitats over time. The following concerns are based on the findings of an extensive technical review of the FPRs by NMFS Portland and Olympia Office staff. The findings below are also largely supported by the "Threshold Review" process conducted by EPA, OCRM and the State of Oregon during August of 1996; that review also raised five of the following six concerns.

(1) Mass Wasting (Protection of Unstable Areas):

The FPRs allow timber harvests on highly unstable sites, increasing the potential for landslides, which can occur for up to 15 years after logging because of loss of root strength. Even when trees are yarded with one-end or full suspension above the ground, and new roads are carefully constructed, simply removing the trees can trigger subsequent landslides during major storms. Other forestry activities that disturb the ground and hydrology at a high or medium risk site, such as road construction and maintenance, have high potential for increasing rates and impacts of landslides over background levels. Landslide (mass wasting) events often contribute

large, episodic inputs of fine sediments to streams, which can greatly reduce salmon egg-to-smolt survival through smothering of redds, loss of interstitial spaces (cobble embeddedness) needed for successful egg development, and filling in of pools and side channels needed for rearing and freshwater growth, among other mechanisms.

(2) Small Stream Protection:

Small streams, especially those without fish, continue to receive inadequate protection from potential sediment delivery, and temperature changes. Loss of large woody debris (LWD) in small non-fishbearing streams, due to narrow riparian width prescriptions will also likely result in less storage of fine sediment in smaller tributaries, and increased transport and deposition of fine sediment in downstream salmon spawning and rearing habitats. This is because one of the principal functions of LWD (particularly larger stable "key pieces") is to sequester sediment and deliver it downstream at natural, controlled rates.

(3) Potential Hydrologic Changes:

The lack of rules limiting either the extent or severity of forest operations within a watershed suggests that changes in hydrology from forestry activities are not adequately addressed in the FPRs. Mechanisms of potential adverse hydrologic changes not addressed in the FPRs include (1) increased peak flows, during rain-on-snow events, (2) decreases in low flows in areas dominated by fog drip, (3) interaction of roads and in-unit soil compaction, contributing to advanced hydrographs and increased peak flow magnitude, (4) altered timing of peak flow events due to accelerated melt in snow-dominated systems, (5) road networks, drainage ditches and soil compaction contributing to increased overland flow, surface erosion, and alteration of drainage patterns. These changes in hydrologic conditions can exacerbate other deleterious changes to salmon habitat occurring through other mechanisms. For example, increased peak flows may accelerate channel scour and bank erosion and may destabilize and reduce instream LWD, both of which may reduce habitat complexity and productivity for salmonids.

(4) Cumulative Effects:

There is no process to address cumulative effects of forestry activities in the FPRs. ODF claims that since each Best Management Practice (BMP) will minimize adverse "immediate" effects associated with a specific activity, the overall risk from adverse cumulative effects is likely acceptable. "Immediate effects" do not include effects that occur later in time (after triggering events such as floods, and fires), and do not include indirect and/or off-site effects of the actions, e.g. blanketing of downstream redds with sediment from activities further upstream in a watershed. The contributions to overall cumulative effects of past and reasonably foreseeable future actions are also not addressed. The FPRs require monitoring of selected BMPs, which is intended to point ODF toward changing those BMPs that need improvement. This approach is simply inadequate to assess cumulative effects on aquatic resources such as salmon. Cumulative effects must include the effects of multiple activities in

time and space, and should be evaluated on a watershed-by-watershed basis. Appropriate watershed-specific practices could then be identified and applied to adequately minimize cumulative effects.

(5) Inadequate Long-term Wood into Streams:

FPR requirements for standing conifers along fish and non-fish streams for long-term recruitment of large wood generally provide only 30-60% of the necessary conifer trees, depending on the stream size. Properly functioning riparian areas and, consequently, habitats for anadromous fish, depend on the short- and long-term inputs of large woody debris (LWD) that provide fish habitat features, store fine sediments, and maintain channel complexity.

(6) Road-Related Problems:

There is no process to identify road problems, properly maintain or upgrade existing roads, including older logging roads constructed with practices now considered inadequate for maintaining slope stability. This issue of "legacy roads" is widespread and remains unaddressed by any state agency. These are the single biggest potential sources of sediment to fish streams.

Consistency of Findings with OCRM/EPA's "Threshold Review":

The OCRM and EPA conducted a "Threshold Review", last August, with the State of Oregon to determine what elements of the State's submittal might need further improvement. In that review, OCRM and EPA identified five out of the six items listed above as requiring either further clarification or development of additional management measures. The areas they touched upon were: 1) prioritization of unstable areas (for site visits only, not to avoid harvest operations on them), 2) cumulative watershed effects, 3) effects of roads, 4) small (intermittent) stream protection, 4) provision of adequate LWD from Streamside Management Areas (SMAs). The issue of potential hydrologic changes associated with the application of the FPRs was not specifically addressed in the threshold review; however, this could be considered part of the concern for cumulative effects. It must also be noted that, despite this concern, there is no "management measure" in the forestry land use section of the 6217 guidance that addresses cumulative watershed effects. It is unclear what clarifications or additional management measures have been added or included by the State of Oregon to address any of the concerns raised during the threshold review.

Consistency of ODF FPRs (State of Oregon's submittal) with the 6217 Program Management Measures:

The NMFS Portland Office also has compared the FPRs with the 6217 management measures for Forestry and has found that the FPRs may be consistent with the 6217 management measures. This finding would be consistent with that of OCRM but raises questions about the utility of the management measures for protecting salmon and the essential features of salmon habitat. This suggests that the 6217 program is not adequate for salmon

conservation, and raises questions about the goals and intent of the 6217 Program. For example, is implementation of the 6217 management measures (or alternative measures proposed by each state in lieu of the management measures) supposed to protect all beneficial uses of the State's waters?

An essential question is: How protective are the 6217 management measures, and do they protect salmon? The 6217 Program management measures offer very broad guidance, and contain a significant amount of flexibility. Language such as "where appropriate", "consider", "avoid...to the extent practicable", "develop a process", and "establish Streamside management areas..." that are "...sufficiently wide", appear to considerably weaken the management measures. Most of the measures leave specific details of their implementation up to the relevant State agency or program. Most of the measures are followed by an exhaustive list of "practices" which are given as illustrative examples of how to achieve the management measures; however, these practices have no regulatory weight, and do not have to be used. Furthermore, none of the 6217 management measures specifically address salmon or salmon habitat conservation. As stated previously, there is no 6217 management measure that specifically addresses watershed-scale cumulative effects.

It is critical that the OCRM and EPA clearly articulate the goals and intent of the 6217 Program in light of the above issues. The 6217 Program, by itself, is only one component of the overall State regulatory and non-regulatory approaches needed for coastal salmon conservation. We need to determine whether the 6217 Program is adequate to address nonpoint source water quality impacts to salmon.

Recommendation: The OCRM and EPA could clarify that only a limited number of water quality parameters affecting salmon and their habitat are addressed by the 6217 program and that watershed scale cumulative effects, and loss of critical habitat functions for salmon, may still occur under the 6217 Program. Alternately, and preferably, the management measures could be modified to support all beneficial uses of the State's waters, particularly salmon, and to more specifically address cumulative watershed effects. If it is not feasible to modify management measures, in the short term, a third alternative would be to agree upon an interpretation of the measures that would adequately address at least some categories of concern, e.g. mass wasting, small stream protection (possibly via clarification of the management measure for "streamside management areas"), and potential hydrologic changes, while recognizing that cumulative effects is not addressed by 6217.

ISSUE #2 State of Oregon's Proposed 6217 Boundary.

Section 6217(a) of the Coastal Zone Act Reauthorization Amendments of 1990 (Act) requires that the geographic scope of each coastal nonpoint program must be sufficient to ensure implementation of management measures to "restore and protect coastal waters." Section 6217(e) of the Act requires OCRM to determine the geographic area encompassing the land and water uses having a "significant" impact on the State's coastal waters. Significant impacts can occur from both individual and cumulative effects of land and water uses.

In reviewing a state's coastal zone boundary, OCRM must evaluate whether the boundary extends inland to the extent necessary to control nonpoint source pollution from land and water uses that have a significant impact on the state's coastal waters. Should OCRM, in consultation with EPA, find that boundary modifications are necessary for a state to more effectively manage and protect its coastal waters, OCRM must recommend appropriate modifications to the state's boundary. The state need not adopt the Federal recommendation if it can demonstrate that a smaller geographic area would be adequate to protect and restore its coastal waters. Absent such a demonstration however, OCRM and EPA can expect that the geographic scope of the state's program will correspond to their recommendation. Therefore, the burden of proof rests on the State of Oregon to support its position that its coastal zone boundary will meet the intent of the Act to restore and protect its coastal waters.

By letter dated February 16, 1996, OCRM and EPA provided a response to the State of Oregon regarding its proposed 6217 management area boundary. In this letter, OCRM and EPA concluded that the State's boundary was not sufficient to protect coastal and noncoastal waters in the Rogue and Umpqua River basins. In both basins, continuous impairment of temperature and/or bacteria standards is occurring due to agriculture, grazing, forestry, and hydromodification (e.g., water diversion) in the upper watersheds. All of these land uses are subject to management under the 6217 program.

The NMFS concurs with the OCRM/EPA analysis that the State of Oregon's proposed 6217 management boundary is not adequate to restore and protect water quality in the Umpqua and Rogue River basins. The NMFS also recognizes that the State's boundary in the Columbia River (presently at Bonneville Dam) may not be adequate to protect and restore coastal waters in this basin. Furthermore, should NMFS confer or consult on this plan under section 7 of the Endangered Species Act (ESA), it may be difficult for NMFS to conclude that such a boundary adequately protects proposed or listed species of Pacific salmon. This issue is discussed in more detail under Issue 3 below.

Estuarine areas are critical in the life cycle of Pacific salmon. Estuarine areas provide important nursery and rearing areas for juvenile salmon, enabling these species to feed and undergo physiologic changes necessary to adapt to life in the ocean (Cooper and Johnson 1992). Loss of estuaries may limit food resources of juvenile salmon, forcing them to move to more open waters where they may be more susceptible to predation (Thom 1991). Aside from their importance to salmonids, estuaries are critical habitats for many other sensitive

species, including the California red-legged frog and southwestern pond turtle which are restricted to the freshwater portions of these habitats.

Several studies suggest the impacts of upper watershed activities (such as those occurring in the Rogue and Umpqua River areas which are presently excluded by the State's proposed boundary) on coastal estuaries. Sedell et al. (1980) documented some of the changes in lower rivers between the 1880s and present conditions, resulting from clearing large amounts of instream logs. Many rivers that were deep enough for ocean-going vessels before 1900 are now barely passable by canoes, as a result of extensive and continuing sedimentation. Filling in of estuarine areas by sediment may help contribute to the loss of overall estuarine an in-channel habitat area available for juvenile salmon rearing. Simenstad et al. (1982), found that, from the 1800s to the 1970s, significant changes occurred in the total area of several Puget Sound estuaries; these changes included losses of between 25 and 98 percent of estuarine area, which occurred in 9 out of 12 estuaries examined. Two estuaries, the Nooksack and Stillaguamish, showed increases in estuarine area of 3 and 20 percent, respectively, and one estuary, the Dungeness, was unchanged. While these losses may have been due primarily to diking and filling as well as increased industrial and urban development (in some areas), any additional losses from excess sediment production from upstream forestry activities would have contributed to cumulative loss of estuarine habitats. Madej (1982) studied rates of sediment delivery and transport at Big Beef Creek, located on the western Kitsap Peninsula in Puget Sound. She found that recent land-use changes (logging and roads) increased sediment yield in this fourth-order stream in Western Washington from 22 t/km²/yr to 185 t/km²/yr. In response to this increased sedimentation, channel width increased and depth decreased; however, channel gradient and mean flow velocity remained constant. As a result of channel changes, sediment transport rates increased from 500 t/yr to 4200 t/yr. This represents an increase in sediment production of over 800 percent. Some of this excess sediment undoubtedly ended up in Hood Canal and the Puget Sound estuary.

Studies conducted along the coast of Washington and Puget Sound further indicate the impacts of upper watershed activities. Olympic Peninsula estuaries (as well as most coastal valleys) are narrow and geographically limited because the continental shelf is narrow and relatively steep near the land margin. This geographic configuration limits the lateral extent of estuarine environments. Although little research has been done on estuarine conditions in the northwest Olympic Peninsula, past and present dredging activities suggest that they are sensitive to sediment input and have been altered measurably by forest practices. In Puget Sound, both the Quillayute and the Pysht river mouths were historically used as ports for ocean-going ferries and barges. Presently however, these areas are too shallow to allow passage of more than light recreational boats.

Estuaries and the nearshore continental shelf act as temporary storage areas for sediment delivered downstream by rivers, prior to sediment being transport offshore by marine currents. It is reasonable to assume that, when combined, the documented increases in sediment delivery rates on private, state, and Federal lands would increase the susceptibility

of estuaries to sedimentation and associated habitat degradation. Although little data have been published in this area, the extensive dredging program in the Quillayute River and evidence of sediment burial of algal beds in the Quillayute harbor (Anne Shaffer, Quillayute Fisheries, LaPush, WA, personal communication 1994), as well as previous dredging of the Pysht estuary, suggest that cumulative effects of sedimentation, both in time and space, are a significant concern for the health of estuaries.

Based on the information provided above, NMFS concurs with the OCRM and EPA conclusion that upper watershed activities in the Umpqua and Rogue River basins significantly affect water quality in these areas. Furthermore, NMFS concludes that these same activities (e.g., logging, agriculture, water diversion) significantly affect both water quality and fish habitat in the Columbia River basin. Absent clear and convincing evidence to the contrary, NMFS believes that the State's 6217 boundary should be modified to reflect the OCRM/EPA recommendation.

ISSUE #3 Compliance with Endangered Species Act Requirements

Section 7(a)(4) of the Act requires Federal agencies to confer with the Secretary on any action that is *likely to jeopardize* the continued existence of a proposed species or result in the destruction or adverse modification of proposed critical habitat. Umpqua River cutthroat trout were proposed for listing as endangered species on July 8, 1994 (59 FR 35089).

Klamath Mountains Province steelhead were proposed as threatened species on March 16, 1995 (60 FR 14253). Oregon Coast coho salmon were proposed as threatened species on July 25, 1995 (60 FR 38011). Both steelhead and chinook salmon also occur in this region and some ESUs will likely be proposed as threatened species when NMFS' section 4 funding is restored. Therefore, OCRM/EPA action with respect to the State of Oregon's 6217 coastal management plan may require conferencing on its potential impacts to Pacific salmon stocks.

Prior to conferencing on a given species, an agency must be able to fully identify and describe the geographic extent of its activity and the likely impacts of its action to the proposed species. In the present case, the geographic extent of the State's 6217 boundary remains undecided. Therefore, at the present time, it is impossible for NMFS to determine the likely impacts of this action.

Aside from the fact that the State's 6217 boundary remains unsettled, it is unclear to the NWR of NMFS how such conferencing will be conducted. Potentially, the parties may wish to conduct a programmatic conference which could cover the entirety of the 6217 program. Such a conference may focus on the nationwide impacts of the 6217 program without addressing specific details of individual state plans.

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